

AMPSS: Advancing Mathematics Pathways for Student Success

The problem:

Currently, there is a significant **failure to progress** through required “gateway” mathematics courses. For example, large numbers of students enroll in developmental math, but 70% fail *even to enroll* in credit-bearing math courses. Of those who do enroll, nearly half fail.

There is also a problem with the **appropriateness of the default pathway**: Most students’ majors *do not require Calculus*, yet are placed in a course (Algebra) intended to prepare them for Calculus.

The solution:

Provide modernized math pathways that are connected to students’ programs of study. For example, many institutions in several states are now implementing:

- Statistics-focused pathways for social science majors
- Quantitative reasoning or mathematical methods pathways for humanities and fine arts majors
- Algebra and Calculus pathways for STEM and business majors

Successfully redesigned pathways are also readily transferrable across institutions.

The AMPSS vision: *All students desiring public postsecondary education will have options to receive the rigorous mathematics instruction that is most relevant to their chosen programs of study, whether begun at a 2-year or 4-year institution; there will be seamless transfer of mathematics credits across institutions contributing to greater student course and degree completion.*

AMPSS is a newly formed coalition to coordinate a national drive to address undergraduate mathematics as a significant academic barrier for students striving to complete a 2- or 4-year degree. By summer 2017, we hope to be able to invite statewide teams to join the more than a dozen states that already have efforts underway; we aim to impact 30 additional states in the next 5 years.

Working with AMPSS, your institution or state can:

- get ready access to resources and support for evaluating, planning, redesigning, and implementing math pathways that improve student success;
- make useful connections with other institutions in your state and elsewhere to learn best practices and help ensure seamless transfer;
- **(coming soon)** join a community of institutional leaders, mathematicians, and policy and curriculum experts (or deepen your engagement in it).

The AMPSS coalition is:

Transforming Post-secondary Education in Mathematics (TPSE Math)

The Charles A. Dana Center at The University of Texas at Austin

The Association of Public and Land-grant Universities (APLU)

The American Association of State Colleges and Universities (AASCU)

The National Association of System Heads (NASH)

The Carnegie Foundation for the Advancement of Teaching

Complete College America (CCA)

The Conference Board of the Mathematical Sciences (CBMS)

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SEE REVERSE SIDE FOR THREE WAYS TO ENGAGE IN ADVANCING MATH PATHWAYS.

TAKE ACTION ON MATH PATHWAYS: THREE WAYS TO ENGAGE

1. My state is already working on math pathways at a state-wide level.

Many states are making progress on implementing mathematics pathways. Administrators and mathematics faculty can support statewide efforts by staying informed and asking state math pathways leaders how they might participate. CCA is working with several states (including CO, GA, IN, MD, TN, TX, and WV) on co-requisite remediation strategies that include examining or redesigning math pathways. The Dana Center has worked with teams from 12 states (AR, CO, IN, MD, MA, MI, MO, MT, NV, OH, OK, WA) to modernize entry-level mathematics pathways.

In some states, public college and university systems are working with NASH or Carnegie on redesigning math pathways. Some other states (including OR) have worked with other groups or on their own. Contact AMPSS if you think your state may already be involved in state-level work and you would like to join it.

More info on CCA: www.completecollege.org and on the Dana Center: www.dcmathpathways.org

2. I want to initiate and promote a state-level effort to implement math pathways.

AMPSS and its partners are planning orientation sessions on math pathways in different parts of the country in the coming months, and expects to be able to invite state teams to participate more formally in mid-2017. In the meantime, here's what you can do to get started:

- a) Contact us and let us know your interest – we may be able to connect you with others in your state and/or with partner organizations who are ready to work with you. (Contact info below.)
- b) Consider who should be part of a new state task force on math pathways, including mathematics faculty and other leaders from area campuses, system offices, or state agencies.
- c) Learn about state-level work from the resources on the Dana Center Math Pathways Resource Site, www.dcmathpathways.org, including:
 - Summary report of nine state and regional task forces: *Momentum for Improving Undergraduate Mathematics: Progress from State Mathematics Task Forces*
 - Individual state-level reports on math pathways (including from CO, MO, NV, and OH)
 - Action steps, readiness assessments, and other resources for state-level work

3. I want to implement math pathways at my own institution.

Many institutions are developing their own math pathways or are working with AMPSS partners:

The Carnegie Foundation's Statway® and Quantway® pathways have been implemented in 58 institutions in 15 states. Carnegie's network improvement communities are a key tool for planning and sustaining these pathways. Learn more at www.carnegiefoundation.org.

The Dana Center's recommendations for institutional-level efforts to build multiple math pathways can be found in the case study *Modernizing Mathematics Pathways at Texas Institutions*. The study, along with action steps, technical assistance tools, and other resources for institutions and classrooms, are on the Dana Center Math Pathways Resource Site, www.dcmathpathways.org.

If your institution is a member of AASCU, APLU, or NASH, contact them or AMPSS about their math pathways initiatives.

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